

REMARKS

Claims 23-50 and 54-71 are currently pending in this application. Original PCT claims 1-23 and amended PCT claims 1-22 were cancelled and claims 24-47 (renumbered as claims 23-46 by the Examiner) were added by a Preliminary Amendment. Claims 47-53 were added in a previous Amendment dated September 30, 2003. Claims 51-53 were cancelled and claims 54-71 were added in a previous Amendment dated August 30, 2004. This Amendment amends the specification and claims 23, 25, 33, 35, 57 and 62. Support for the amendments to the specification and the claims can be found in the specification, drawings and claims as originally filed. No new matter has been added.

The specification has been amended to include language that is consistent with the language recited in the claims. Claim 35 has been amended to correct a typographical error.

The Examiner has rejected claims 64 and 65 under 35 U.S.C. § 103(a) for obviousness over British Published Patent Application No. GB 2,345,370 A to Tamburrini et al. (hereinafter "the Tamburrini reference") in view of U.S. Patent No. 5,504,316 to Bridgelall et al. (hereinafter "the Bridgelall patent") and U.S. Patent No. 5,979,770 to Schlieffers et al. (hereinafter "the Schlieffers patent"). The Examiner asserts that the Tamburrini reference teaches the claimed invention except for (1) a fixed mode scan pattern or a hand mode scan pattern cast through the standing front wall; (2) both scan patterns being cast through one in the same window 38 in the housing; and (3) a resilient holder arranged around at least part of the housing. The Examiner asserts that the Bridgelall patent teaches a fixed mode or a hand mode scan pattern being cast through one in the same window in the housing, and a resilient holder arranged around at least part of the housing. Therefore, the Examiner contends that it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the teachings of the Bridgelall patent into the teachings of the Tamburrini reference in order to provide a more feasible, compact and accurate system, wherein the device is secured within the resilient holder thus preventing the device from moving during the reading process. The Examiner combines the Schlieffers patent with the Bridgelall patent and the Tamburrini reference for the asserted teaching of a resilient gasket 31 arranged at least partially over each of the bottom side, top side, standing rear wall, standing front wall and standing side walls of the scanning device. Therefore, the Examiner contends that it would have been obvious to an artisan of ordinary skill in the art at

the time the invention was made to incorporate the resilient gasket 31 of the Schlieffers patent into the teachings of the Bridgelall patent and the Tamburrini reference in order to protect the scanning device from damage in the event of accidentally dropping, bumping or rubbing against objects during use. As discussed below in detail, Applicants respectfully disagree with the Examiner's assertions.

The Tamburrini reference is directed to a barcode reading device that can operate in a fixed mode and a portable mode. The device includes a laser light source 550 for transmitting a scanning beam 556 (page 21, lines 29-31), a rotatable mirrored polygon for reflecting laser light (Figs. 16-17 and page 21, lines 15-17), a number of fixedly disposed pattern mirrors for reflecting laser light (page 22, lines 1-2), a pick-up element for picking up the laser light scattered by a barcode (page 23, lines 8-12) and a compact housing (Figs. 1, 3-10, 13, 14 and 19). The housing has two distinct scan windows 104 and 108 (Fig. 1), one for the hand mode operation and another for the fixed mode operation, for casting two respective laser light scan patterns. Referring to Fig. 12, the device also comprises a fold mirror 273 which redirects laser light coming from a laser light source or a laser diode 255 onto the rotatable mirrored polygon or facet wheel 250 (page 16, lines 12-14). The Examiner concedes that the Tamburrini reference does not teach or suggest a resilient holder arranged around at least a part of the housing.

The Bridgelall patent is directed to a scanner that is operable in both portable (handheld) and surface mounted (hands free) modes for reading various types of indicia (column 1, lines 30-33). The scanner comprises a means for determining whether the operation is in a fixed or portable mode, and a means for adapting the scan pattern to an optimized pattern for such mode of operation (column 4, lines 25-30). The scanner 30 is housed in a light-weight plastic housing 40 and can be held in the palm of a user's hand (column 8, lines 39-43). The scanner 30 can also be mounted in a bracket 114 when operating in a fixed mode (Fig. 20A). Figs. 1B and 20A show the scanner 30 having one window, wherein both a fixed mode scan pattern and a handheld mode scan pattern are cast through. Fig. 20A also shows the scanner 30 having a rubber grip 110 around the crown of the scanner housing (i.e., top wall and side walls only). The Examiner also concedes that the Bridgelall patent as modified by the Tamburrini reference is silent with respect to the protective resilient holder arranged at least partially over each of the bottom side, top side, standing rear wall, standing front wall and standing side walls.

The Schlieffers patent is directed to a hand held optical scanning device that includes a body portion 12 and a handle portion 14. The body portion 12 includes a lower housing member 16 which is joined to an upper housing member 18 forming a cover. An upper surface of cover 18 includes a digital display 24 and a keypad 22 (Figs. 1 and 2 and column 2 lines 37-44). A resilient sealing member 31 extends a distance beyond the lower body 16 and cover 18 around almost the entire periphery of the body portion 12 (Figs. 2 and 3 and column 3, lines 34-38). The Schlieffers patent does not teach or suggest a resilient member 31 arranged at least partially around the top or upper surface of the scanning device. Because the digital display 24 and keypad 22 occupy practically the entire upper surface of the device of the Schlieffers patent, placing a resilient gasket over a portion of the upper surface would interfere with its operation, thus making the device inoperable.

In view of the above, none of the cited prior art references teaches or suggests a resilient holder arranged at least partially around each or all of the walls of the housing as claimed in independent claim 64. Because claim 65 depends from claim 64, it is believed to be patentable over the Tamburrini reference, the Bridgelall patent and the Schlieffers patent and likewise in condition for allowance. Accordingly, withdrawal of the rejection and allowance of claims 64 and 65 are respectfully requested.

The Examiner has rejected claims 23, 24, 31, 32, 43, 46-49, 55-57 and 59-61 under 35 U.S.C. § 103(a) for obviousness over the Tamburrini reference as modified by the Bridgelall patent as applied to claim 64, and further in view of U.S. Patent No. 5,962,838 to Tamburrini (hereinafter "the '838 patent"). The Examiner asserts that the Tamburrini reference and the Bridgelall patent teach the claimed invention except for a control means that switches the laser light source on or off such that, depending on the switching on and off, the laser light beam selectively falls on at least one of the number mirrors, thereby generating the hand mode scan pattern or the fixed mode scan pattern. The Examiner asserts that the '838 patent teaches a switching mechanism for switching the laser light source on or off such that the laser light beam selectively falls on at least one of mirror set 104a-f or 102a-f. Therefore, the Examiner contends that it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate a switching mechanism as taught by the '838 patent into the system of the Tamburrini reference and the Bridgelall patent in order to provide an advance system which does not require any mechanical movement of a pattern generated optics or scan mechanism to switch between scan patterns. In response,

independent claims 23 and 57 have been amended to specify that the device is capable of casting a fixed mode scan pattern and a hand mode scan pattern through one and the same window in the housing after reflection of said laser light beam on at least one of said same number of mirrors. In other words, both the hand mode scan pattern and the fixed mode scan pattern are generated by reflection on the same mirrors that are aligned along a single circumferential direction. Support for the amended language can be found, for example, in Figs. 3-5 and on page 10, lines 19-29, page 11, line 33 to page 12, line 2 of the present specification. As discussed below in more detail, none of the cited prior art references teaches or suggests that both scan patterns are generated by means of the same set of mirrors.

The Examiner agrees that the Tamburrini reference and the Bridgelall patent, which have been discussed above, fail to teach or suggest a control means that switches the laser light source on or off, such that depending on the switching on or off, the laser light beam selectively falls on at least one of the number of mirrors, thereby generating the hand mode scan pattern or the fixed mode scan pattern.

The '838 patent discloses a barcode scanner with multiple modes of operation producing two or more distinct scan patterns, with each scan pattern optimized for different modes of operation with a manually actuated switching mechanism whereby the operator may readily select a desired scan pattern (Abstract). As shown in Figs. 1, 2, 4 and 5, a barcode scanner 100 having a manually switchable scan pattern includes a first scan pattern generating mirror set 102a-f, a second scan pattern generating mirror set 104a-f (Fig. 1B), a rotating facet wheel scan mechanism 106, and a light source shown as laser diode 108 (column 3, line 64 to column 4, line 3). A switching mechanism may be employed to switch between (A) pattern generating mirror set 102 with the operating position A shown in Fig. 2, and (B) pattern generating mirror set 104 with the operating position B shown in Fig. 5. In the first operating position A, pattern generating mirror set 102 may produce a scan pattern 300 as shown in Fig. 3. When switching to the second operating position B, pattern generating mirror set 104 produces scan pattern 600 as shown in Fig. 6 (column 4, lines 14-23). According to Fig. 1A, mirror facets 106a and 106c are angled to direct the beam 107 only onto mirror set 102a-f to produce the (A) pattern and, mirror facets 106b and 106d are angled to direct the beam 107 only onto mirror set 104a-f to produce the (B) pattern as shown in Fig. 1B (column 5, lines 12-19). The '838 patent discloses two distinct sets of mirrors 102a-f and 104a-f used to generate two different scan patterns, respectively. Even if mirror

sets 102a-f and 104a-f were considered to be one mirror set, this scanner is not capable of casting two different scan patterns on at least one of the same number of mirrors in the mirror sets 102a-f and 104a-f.

Because none of the prior art of record teaches or suggests a device that is capable of casting a fixed mode scan pattern and a hand mode scan pattern through one and the same window in the housing after reflection of said laser light beam on at least one of said same number of mirrors as claimed in amended independent claims 23 and 57, withdrawal of rejection and allowance of claims 23, 24, 31, 32, 43, 46-49, 55-57 and 59-61 are respectfully requested.

The Examiner has rejected claims 25-28, 33, 34, 44, 50, 54, 62 and 63 under 35 U.S.C. § 103(a) for obviousness over the Tamburrini reference as modified by the Bridgelall patent and the '838 patent as applied to claim 23, and further in view of U.S. Patent No. 4,758,731 to Schuster. The Examiner asserts that the Tamburrini reference, the Bridgelall patent and the '838 patent teach the claimed invention except for a mirror that is foldable between two operative positions; in the first position of which a substantially flat mirror surface of the mirror reflects a laser light incident thereon and, in the second position of which a substantially concave rear mirror surface reflects a laser light incident thereon. The Examiner asserts that the Schuster patent teaches an oscillating mirror 12 which serves as a fold mirror that is foldable between a first position of which a substantially flat front mirror surface 47a of the mirror reflects the laser light incident thereon, and in the second position of which a substantially concave rear mirror surface 45 reflects the laser light incident thereon. Therefore, the Examiner contends that it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate a foldable mirror as taught by Schuster into the teachings of the Tamburrini reference, the Bridgelall patent and the '838 patent in order to enhance a deflective capability of the scanner system and to provide a more feasible and compact system.

In response, claims 25, 33 and 62 have been amended to specify that the mirror foldable between two stationary operative positions, in the first position of which a first mirror front surface reflects at least the transmitted laser light incident thereon and in the second position of which a second mirror rear surface reflects at least the transmitted laser light incident thereon. In other words, the foldable mirror reflects at least the transmitted laser light by both its front and rear surfaces. Support for the amended language can be

found, for example, in Figs. 3, 5 and 6 and on page 12, lines 35-29 of the present specification. As discussed below in more detail, none of the cited prior art references teaches or suggests a mirror foldable between two stationary operative positions, wherein at least the transmitted laser light is reflected by both the front and rear surfaces of the mirror.

The Examiner agrees that the Tamburrini reference, the Bridgelall patent and the '838 patent, which have been discussed above, fail to teach or suggest a foldable mirror, wherein a substantially flat mirror surface of the mirror reflects a laser light incident thereon when in a first position and, a substantially concave rear mirror surface reflects a laser light incident thereon when in a second position.

The Schuster patent discloses a method in which light fluxes that are distinguishable according to associated coordinate directions are combined in a beam path, imaged in a common intermediated image plane and deflected by an optical element according to their coordinated directions, and are projected by an imaging system onto the object to be measured in each instance (column 1, lines 48-56). Fig. 1 shows a tubular optical system consisting of lenses 8, 9 and a deflecting prism 10 which images an illumination slit 7 in an intermediated image plane 11 common to the light fluxes. On the path thereto, the light fluxes are conducted via an oscillating mirror 12 pivotable in the direction of the double arrow A and passed through a polarizing double-image prism 13 (column 2, lines 44-50). In order to scan the object structure images, the oscillating mirror 12 is pivoted. In the course of its pivoting movement, the oscillating mirror 12 synchronously deflects the illumination beam path (by its front surface) and the measurement beam path (by the rear surface) (column 3, lines 51-54). Because the oscillating mirror 12 of the arrangement of the Schuster patent is oscillating when in operation, mirror 12 has no stationary operative position as claimed in claims 23 and 62. Furthermore, the front surface and the rear surface of mirror 12 do not reflect at least the transmitted laser light (i.e., front surface reflects the illumination beam (transmitted light) and rear surface reflects the measurement beam) as claimed in amended claims 25, 33 and 62.

In view of the above, there is no teaching, suggestion or motivation in either of the cited prior art references to provide a mirror that is foldable between two stationary operative positions and at least reflects transmitted light on both a front surface and a rear surface of the mirror. Because claims 26-28, 34, 44, 50, 54 and 63 depend either directly or indirectly from amended claims 25, 33 or 62, they are believed to be patentable over the cited

prior art for the reasons discussed above. Accordingly, withdrawal of the rejection and allowance of claims 25-28, 50, 54, 62 and 63 are respectfully requested.

The Examiner has rejected claims 29 and 30 under 35 U.S.C. § 103(a) for obviousness over the Tamburrini reference as modified by the Bridgelall patent and the '838 patent and further in view of U. S. Patent No. 4,958,894 to Khowles. The Examiner cites the Khowles patent for the teaching of a coil in a bumper, wherein the coil serves as a means for oscillating the mirror about an axis, and the bumper serves as a blocking means for keeping the mirror in position. Because claims 29 and 30 depend either directly or indirectly from amended independent claim 23, they are believed to be allowable for the same reasons as discussed above in connection with amended independent claim 23.

The Examiner has rejected claims 35, 36, 38-42, 45 and 66 under 35 U.S.C. § 103(a) for obviousness over the Tamburrini reference in view of U. S. Patent No. 6,053,413 to Swift et al. (hereinafter "the Swift patent") for the reasons discussed in Item 8, pages 9 and 10 of the Office Action. The Examiner asserts that the Tamburrini reference discloses a plurality of flat mirror surfaces [564-566, 580-583] defining a lateral surface which is closed around an axis of rotation of the polygonal mirror and a scan engine 560, which serves as a drive means for driving a rotating support member. The Examiner asserts that the Tamburrini reference fails to teach that the polygonal mirror is placed with the outer ends thereof on the rotating support member. The Examiner combines the Tamburrini reference with the Swift patent for the asserted teaching of a two-mode operation scanner having a plurality of flat mirror surfaces 118 defining a lateral surface, which is closed around an axis of rotation of the polygonal mirror, wherein the polygonal mirror 114 is placed with its outer ends thereof on the rotating support member (Fig. 13; column 14, lines 12-52 and column 16, lines 22-67). Therefore, the Examiner contends that it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the teachings of the Swift patent into the system as taught by the Tamburrini reference in order to provide for a better arrangement of the components within the apparatus. As discussed below in detail, Applicants respectfully disagree with the Examiner's assertions.

The Tamburrini reference, which has been discussed above, discloses a scan engine 560 that includes a number of pattern mirrors 564-566 and 580-583 that are arranged partially around a facet wheel 558 (i.e., rotatable polygonal mirror) as shown in Fig. 16. The Examiner concedes that the Tamburrini reference is silent with respect to a plurality of flat

mirror surfaces defining a lateral surface which is closed around an axis of rotation of the rotatable polygonal mirror, wherein the polygonal mirror 14 is placed with its outer ends thereof on a rotating support member.

The Swift patent is directed to an optical scanner that includes a compact housing 100 having a front and rear faces 102, 104 and side faces 106, 108 as shown in Fig. 12. In operation, a laser emits a beam which travels substantially parallel with the lower surface 104 of the housing. The beam is then reflected from a small stationary fold mirror 112 onto a rotating polygonal mirror 114 which is actuated by an electric motor 116 (Fig. 12 and column 16, lines 15-26). Fig. 12 of the Swift patent shows the lower end of the polygonal mirror 114 spaced from the support member (i.e., electric motor 116) via a drive shaft. This shaft which extends from the electric motor rotates the polygonal mirror 114. In contrast, the polygon 14 of the device of the present invention is placed directly onto a rotating disc 16 of the drive motor 15, such that a drive shaft is not required. Page 14, line 22 to page 15, line 15 of the present specification discloses the numerous advantages of a scanning device that does not have a drive shaft versus a scanning device that has a drive shaft to rotate the polygonal mirror. Because the Swift patent does not disclose a polygonal mirror having its outer ends placed on a rotating support member as claimed in independent claim 35, independent claim 35 and dependent claims 36, 38-42, 45 and 66 are believed to be distinguishable over the Tamburrini reference and the Swift patent for the reasons discussed above. In view of the above, withdrawal of the rejection and allowance of claims 35, 36, 38-42, 45 and 66 are respectfully requested.

The Examiner has rejected claim 37 under 35 U.S.C. § 103(a) for obviousness over the Tamburrini reference as modified by the Swift patent and further in view of U. S. Patent No. 5,629,510 to Quinn et al. (hereinafter "the Quinn patent"). Because claim 37 depends from independent claim 35, claim 37 is believed to be allowable for the same reasons discussed above in connection with claim 35.

The Examiner has rejected claims 67-71 under 35 U.S.C. § 103(a) for obviousness over the Tamburrini reference as modified by the Swift patent and further in view of the '838 patent. Claims 67-71 depend either directly or indirectly from independent claim 35 and, therefore, claims 67-71 are believed to be patentable over the prior art for the same reasons discussed above in connection with claim 35.

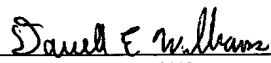
Application No. 09/787,093
Paper Dated: January 3, 2006
In Reply to USPTO Correspondence of July 1, 2005
Attorney Docket No. 702-010383

CONCLUSION

In view of the above amendments to claims 23, 25, 33, 35, 57 and 62 and the above remarks, withdrawal of the rejection of the claims and allowance of claims 23-50 and 54-71 are respectfully requested.

Respectfully submitted,

THE WEBB LAW FIRM

By 
Darrell E. Williams
Registration No. 45,222
Attorney for Applicants
700 Koppers Building
436 Seventh Avenue
Pittsburgh, PA 15219-1818
Telephone: 412-471-8815
Facsimile: 412-471-4094
E-mail: webblaw@webblaw.com